

REMARKS

In response to the Office Action mailed on September 2, 2005, Applicant files this reply. To expedite prosecution of this Application, Applicant submits the following amendments and remarks discussing patentability of the pending claims.

In this reply, Applicant amends claims 1, 19, and 63. Note that no new matter has been added as a result of amending these claims to the application. Claims 9 and 65 are being cancelled by way of this reply.

If the Examiner believes, after reviewing this Response, that the pending claims are not in condition for allowance, the Examiner is respectfully requested to call the Applicant(s) Representative at the number below.

Objection to Claim 19

The Office Action includes an objection to claim 19 for lack of definiteness. Applicants mistakenly indicate in the last office action reply that claim 19 was amended in accordance with the Examiner's suggestions. To correct the matter, Applicant's have modified claim 19 via this amendment to cure the issue raised by the Examiner. Applicant apologizes for the mistake and appreciates the Examiner's careful review of the claims.

Patentability of Claim 1 and Corresponding Dependent Claims

The Office Action cites Calvignac (U.S. Patent 6,539,394) as the closest prior art to reject the invention as in claim 1. Applicant has amended claim 1 to include the limitations of previously pending claim 9.

Claim 1 now recites "wherein the method further includes the step of determining a role identity of a requestor submitting the access request; and

wherein the step of performing includes sequentially processing each rule operation in the selected set of rules using the role identity of the requestor submitting the access request in combination with the identity of the resource to determine if the requestor using the role identity can access the resource.” Applicant respectfully submits that this limitation distinguishes claim 1 over the cited art.

To reject claim 9 (now amended claim 1), the Examiner cites many passages in Calvignac without specifically pointing to corresponding text that is used to reject the claimed invention. The amount of text cited by the Examiner is so broad that there is no specific indication in the office action to which the Examiner likens elements of the claimed invention. Presumably, the Examiner cites such broad passages because the Examiner cannot specifically point to any techniques that would anticipate the claimed invention.

Applicant respectfully submits that the cited passages do indicate that Calvignac is directed to filtering transmission of data packets in a network environment as indicated in the cited passages. For example, Calvignac applies different filter rules to a respective data packet depending on data in a respective header of the data packet. However, Applicant sees no evidence in Calvignac that a respective packet header of a data packet in Calvignac includes a role identity of the requestor. Mere recitation of applying different functions to packets based on filter rules applied to a respective packet header as in Calvignac does not amount to determining a “role identity” (e.g., characteristic or function) of a requestor submitting an access request and using the “role identity” of the requestor in combination with the identity of the resource to determine if the requestor using a corresponding role identity can access the resource. Applicant is not aware of any prior art techniques in which the header of a respective data packet identifies a “role identity” of a requestor. Thus, Applicant

submits that Calvignac does not teach every element of amended claim 1. Claims 6, 12, 13, and 14 should be allowable because they depend from claim 1.

Patentability of Claim 19 and Corresponding Dependent Claims

The Office Action cites Calvignac (U.S. Patent 6,539,394) as the closest prior art to reject the invention as in claim 19. Applicant's respectfully traverse the rejection on grounds that the cited reference does not teach every claim limitation. For example, in summary, the cited reference discloses a technique of generating a decision tree (figure 5 of Calvignac) to select which of multiple rules to apply in order to make a forwarding decision. The "disregard process" cited by the Examiner and used to create the decision tree (which is used prior to performing the rules to make a data packet forwarding decision) is not equivalent to the claimed technique of sequentially performing rules in which execution of a disregard operation in one rule affects execution of other rules.

The Examiner cites broad portions of Calvignac at column 6, line 15 to column 8, line 47 because the Examiner cannot specifically point out how Calvignac anticipates the claimed invention. The cited section in Calvignac reads as follows:

FIG. 3A depicts a more detailed flow chart of one embodiment of a method 110 in accordance with the present invention. The method 110 is one embodiment of the method 100 and is used in a similar manner to reduce the amount of testing required. The minimum and maximum values of the ranges for the filter rules are used to determine subsets of rules, via step 112. Each subset is for a different dimension for which the filter rules utilize a range of values. For example, if the IP header is used as a key, the ranges can be in one or more of five dimensions, one for each field in the IP header. Thus, there is a subset in one or more of the five dimensions. Furthermore, the subsets are distinct. Thus, each subset includes a different portion of the filter rules undergoing testing. The subsets include rules

which do not intersect. Thus, in a particular dimension, the subset of rules corresponding to that dimension do not intersect in that dimension. The minimum and maximum values of the filter rules are used to ensure that the filter rules in a particular subset do not intersect.

Once the subsets of filter rules are obtained, the key undergoing test is tested against each of the subsets to determine which, if any, of the rules from each subset the key may match, via step 114. Preferably, only the field of the key corresponding to the appropriate dimension is tested against the subset for that dimension. For example, if a subset of filter rules which do not intersect in the source address dimension is obtained, the source address of the key is tested against the subset of filter rules for the source address. The minimum and maximum values of the subset are used to test a key in a particular dimension. If the key matches one of the rules in a particular subset, that key may match that rule. In a preferred embodiment, a maximum of one rule may be a match for the key in a particular dimension because each subset preferably includes only those filter rules which do not intersect in the particular dimension being tested. Thus, using step 114, the number of filter rules which the key may match may be greatly reduced to a number of rules no larger than the number of dimensions for which the filter rules use ranges of values.

Once the rules which the key may match are isolated, the key is explicitly tested against these rules, via step 116. Step 116 thus includes testing each dimension for each of the rules. If the key matches more than one rule, then the priority of the rules is determined and the rule with the highest priority controls. Thus, the number of rules against which each field of the key must be explicitly tested is greatly reduced. Consequently, the application of filter rules is made simpler and more efficient.

FIG. 3B depicts a more detailed flow chart of a method for performing step 112,

determining the subsets. A sweep is performed in each dimension for which the plurality of rules has a range to determine a subset in each dimension, via step 122. Using the minimum and maximum values for each dimension, each sweep determines a distinct subset of non-intersecting rules. Thus, the sweep process is then repeated for the remaining dimensions: the destination address, the source port, the destination port, and the protocol. Consequently, a subset of non-intersecting rules is obtained for each dimension using step 122.

A subset of the subsets determined in step 122 is then selected as the first subset, via step 124. The largest subset, the subset including the most filter rules, is preferably selected in step 124 as the first subset. The filter rules contained in the first subset and the corresponding dimension are then temporarily discarded, via step 126. In other words, the filter rules in the first subset and corresponding dimension will not be considered when forming further subsets in step 112.

Using the remaining filter rules and dimensions, subsets of non-intersecting rules are determined for each of the dimensions, via step 128. Step 128 preferably utilizes sweeps which are similar to those discussed above with respect to step 122. Thus, step 128 uses the minimum and maximum values of the filter rules to provide subsets of rules which are nonintersecting. A next subset is selected from the subsets determined in step 128 and both the filter rules in that subset and the corresponding dimension are discarded, via step 130. In a preferred embodiment, step 130 selects the largest subset of the subsets formed in step 128 as the next subset. Steps 128 and 130 are then repeated for the remaining dimensions, via step 132. Thus, via step 128 through 132, subsets of non-intersecting rules are built for the remaining dimensions. In a preferred embodiment, all dimensions can have a subset of non-intersecting rules. However, in the case where this is not possible, preferably only the last dimension may have intersecting rules.

Thus, using steps 122 through 132, subsets preferably including non-intersecting

rules are built for each of the dimensions. Referring back to FIG. 3A, once these subsets are built, the key can be tested by testing one field, or dimension, of the key against each subset using step 114 of the method 110. As a result a relatively small number of rules which the key may match is obtained. Because only one field of the key is tested in each dimension, testing is relatively simple. This testing can greatly narrow the number of filter rules which a key may match. In a preferred embodiment, the maximum number of rules which a key can match is equal to the number of dimensions. Using step 116, all fields of the key may then be explicitly tested against the filter rules obtained in step 114. Thus, the filter rules which the key may match can be relatively rapidly and easily determined.

FIGS. 3C-3D depict a method for performing a sweep in step 122. Using the minimum and maximum values for each dimension, each sweep determines a distinct subset of non-intersecting rules. The sweep is commenced at the minimum value for the dimension, via step 135. It is determined whether the minimum value for a filter rule has been encountered, via step 136. If not, the sweep is continued, via step 137, until a minimum value is encountered. Once a minimum value is encountered, it is determined whether more than one filter rule shares the same minimum value, via step 138. If not, then the filter rule encountered is selected as part of the subset for the dimension, via step 139. If more than one filter rule shares the same minimum value, then one filter rule is selected as being part of the subset and the other filter rule(s) sharing the minimum value are discarded for the dimension, via step 140. In a preferred embodiment, the filter rule having the lowest index value is selected as part of the subset in step 140. The sweep is then continued, via step 141.

It is determined whether the minimum value for another filter rule is encountered before the maximum value of the selected filter rule has been encountered, via step 142. If the minimum value for another filter rule is encountered, then the filter rule is discarded, via step 143. It is determined whether the maximum value

for the selected filter rule has been encountered in the sweep, via step 144. If no, then the sweep is continued, via step 145. This process of discarding filter rules is continued until the maximum value of the selected filter rule is encountered. Thus, filter rules which have a range that overlaps the selected rule are discarded for the dimension of interest. Once the maximum value for the selected rule is encountered, the sweep is continued, via step 137. Thus, the sweep will continue until another minimum value for another filter rule is encountered. This process of selecting filter rules and discarding other filter rules having overlapping ranges is continued until the rules are all either selected or discarded or until the end of the dimension is reached. Thus, a non-intersecting set of filter rules for a dimension can be obtained. The non-intersecting filter rules in the subset are also ordered from smallest to largest minimum values. The method 122 can be repeated for other dimensions.

For example, assume that the above five fields of the IP header of a packet are used as a key. Also assume that the plurality of filter rules utilize ranges for the source address, destination address, source port, destination port and protocol. A sweep may be performed first for the source address. The sweep commences at the smallest possible value of the source address, zero, using step 135. When the sweep reaches the smallest minimum value for a rule, that rule is selected as part of the subset using step 139 or, if two or more rules have the same minimum value one of the filter rules, using step 140. Any filter rule which intersects the selected filter rule is discarded using step 140 or 142. The discarded filter rules are not part of the subset. Thus, any filter rule having a range which overlaps the range of the selected filter rule is not part of the subset. After reaching the maximum value of the selected rule, the sweep continues until a next minimum value is reached. This process is continued until a subset of non-intersecting filter rules is obtained for the source address. Furthermore, the sweep ensures that the subset includes rules which are ordered from smallest to largest minimum values.

The sweep process is then repeated for the remaining dimensions: the destination address, the source port, the destination port, and the protocol. (emphasis added)

As shown in the above cited passages, these portions of Calvignac disclose a method of selecting filter rules to create the decision tree. In the office action, the Examiner relies on this language and argues that this is equivalent to the claimed limitation of “producing an access control decision based on performing rule operations in a given rule of the selected set of rules by sequentially performing rule operations in the given rule until performing a disregard instruction, the disregard instruction including disregard criteria identifying a type of other rule operations in the selected set of rules to disregard from performing.” Applicant contends that “selecting filter rules” as discussed above in Calvignac is not equivalent to “performing rule operations in a given rule” as in the claimed invention. Based on this clear difference between the claimed invention and the cited prior art, Applicant traverses the rejection.

First, Applicant points out the above cited passages of selecting a subset are more akin to the claimed step of “selecting, based on the access request, a set of rules containing at least one rule from a master set of rules.”

Applicant would again like to point out that in addition to reciting a step of selecting a set of rules, the claimed invention recites “producing an access control decision based on performing rule operations in a given rule of the selected set of rules by sequentially performing rule operations in the given rule until performing a disregard instruction, the disregard instruction including disregard criteria identifying a type of other rule operations in the selected set of rules to disregard from performing.” The above cited passages do not teach or suggest this claim limitation.

In the last office action, the Examiner changes his argument about what portions of Calvignac anticipate the above claim limitation. For example, the Examiner additionally cites figure 5, column 3, lines 49-53, and column 10, lines 1-14 of Calvignac to reject the claimed invention. The Examiner contends that Calvignac discloses a decision tree, which is used to isolate a portion of a plurality of rules on a leaf path having at least one node.

Applicant respectfully submits that the decision tree in Calvignac also does not anticipate the claimed step of: “producing an access control decision based on performing rule operations in a given rule of the selected set of rules by sequentially performing rule operations in the given rule until performing a disregard_instruction, the disregard instruction including disregard criteria identifying a type of other rule operations in the selected set of rules to disregard from performing.”

A clear difference between the claimed invention and the cited prior art is the technique of how rules are applied to make a decision. For example, Calvignac discloses a technique of creating a decision tree. Each non-leaf node in the decision tree is used for making a decision of what branch to take and making a selection of which rules should be applied to make a forwarding decision. As shown in FIG. 5 of Calvignac, rules reside in the respective leaves of the decision tree and are selected after completing decisions in a respective path of the decision tree. Calvignac indicates that that the selected rules at the leaf of a tree are then used (e.g., executed) to make a routing decision for the packet. Note that the selected rules at the leaf nodes of the decision tree are not performed until after completing a decision path and arriving at a leaf node. Also, note that Calvignac does not disclose how eventual execution of one selected rule affects another.

In contradistinction to Calvignac, the claimed invention recites that rule operations in a given rule are sequentially performed until performing a disregard instruction. Calvignac does select which rules to apply to a header of a data packet to generate a forwarding decision. However, Calvignac does not mention that, after selection (e.g., the claim recites “performing rule operations in the selected set of rules”) and sequentially performing the selected rules, a technique of disregarding future rule operations in the selected set of rules based on execution of a disregard instruction in the selected rules. The disregard process cited by the Examiner to reject the claimed invention corresponds creation of the decision tree, which occurs before the selection process, not after.

Also, note that the disregard instruction in the claimed invention includes criteria identifying a type of rule operations in the selected set of rules to disregard from performing. Claim 19 includes a description of how to carry out a disregard instruction. For example, claim 19 further recites:

“after performing the disregard instruction in the given rule:

- i) evaluating the disregard criteria against any remaining unperformed rule operations in other rules of the selected set of rules, the other rules being rules other than the given rule;
- ii) marking any remaining unperformed rule operations in the other rules of the selected set of rules that match the disregard criteria to be disregarded from further rule processing; and
- iii) executing remaining unmarked rule operations in the other rules in the selected set of rules.”

Thus, another clear difference between Calvignac and the claimed invention is the way in which rules are disregarded. Calvignac does not recite this step because of the nature of “pre-compiling” the decision tree and thereafter using the decision tree to identify which of multiple rules shall be applied to make

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a respective data packet forwarding decision. Again, the claimed invention involves sequentially performing the rule operations to carry out a respective disregard instruction. Performance of the rules and a disregard instruction in a given rule during a sequential execution of the rules dictates which further rule operation in the selected set of rules shall be performed.

Based on the above distinctions, Applicant respectfully submits that the rejection of claim 19 under 35 U.S.C. § 102(e) is improper. If the rejection is to be maintained, Applicant requests that the Examiner point out with particularity where the cited prior art discloses a configuration including all of the claim limitations as recited by amended claim 19. Accordingly, allowance of claim 19 as well as corresponding remaining dependent claims 24, 27, 30-32 is respectfully requested.

Note that claim 27 includes similar limitations as now amended claim 1 and should be allowable for similar reasons.

Patentability of Claim 45

The Office Action cites Calvignac (U.S. Patent 6,539,394) as the closest prior art to reject the invention as in claim 45. As in the last office action, Applicants respectfully traverse the rejection because claim 45 includes limitations not found in any of the cited references. The Examiner provides no new argument of patentability other than basically reciting the rejection in the last office action. The Examiner however seems to narrow the amount of text cited in Calvignac for this office action to reject the claimed invention. The Examiner should note that the arguments of patentability of claim 45 in the last office action reply were different than that for claims 1 and 19. In other words, claim 45 includes patentable distinctions over original claims 1 and 19.

Applicant again submits that claim 45 includes distinctions over the cited prior art. For example, claim 45 recites “selecting at least two rules for performance to determine an access control decision, the at least two rules including a first rule and a second rule; performing a rule operation in the first rule of the at least two rules, the rule operation including a disregard instruction that, when performed, causes non-performance of at least one rule operation in the second rule that is disregarded based on the disregard instruction; and performing at least one rule operation in the second rule other than the at least one rule operation in the second rule that is disregarded.”

As discussed above, Calvignac discloses how to create a decision tree that is used to select rules for making a decision. Although Calvignac does not get into any relevant details regarding execution of the rules, Calvignac does indicate that rules at the leaf nodes of the decision tree are used to make the forwarding decision. This is because Calvignac approaches the problem in a different way than in the claimed invention. Calvignac does not disclose performing a disregard instruction in a first selected rule, performance of the disregard instruction causing non-performance of a rule operation in a second rule operation, while at least one rule operation in the second rule is still performed. In other words, according to the claimed invention, the second rule operation includes some non-performed rule operations (e.g., disregarded rule operations based on execution of a disregard instruction in a first rule) and some performed rule operations. There is no indication in Calvignac that only a portion of a given rule (rather than all of a given rule) is ever performed as in the present invention. Calvignac only shows how to use the decision tree to select the rules that shall be used to make a forwarding decision.

Calvignac also does not show performing a disregard instruction in one rule, which results in performance of some rule operations and non-performance

of other rule operations in another rule. In fact, Calvignac does not disclose that a given rule includes multiple rule operations at all as in claim 45.

The Examiner assumes that a rule in Calvignac includes multiple rule operations without any basis. Applicant disagrees with this assertion. Calvignac does not disclose that a rule includes multiple rule operations. Claim 45 recites that at least one rule operation (e.g., in the second rule) is disregarded and one rule operation is performed in the second rule.

Based on existing distinctions, Applicant respectfully submits that the rejection of claim 45 under 35 U.S.C. § 102(e) is improper. If the rejection is to be maintained, Applicant requests that the Examiner point out with particularity where the cited prior art discloses a configuration including all of the claim limitations as recited by claim 45. Accordingly, Applicant requests allowance of claim 45 and corresponding dependent claims 77-80.

The Examiner has rejected claim 77 under 35 U.S.C. § 112, first paragraph. Applicant respectfully traverses this rejection because the claim does not present new matter and is disclosed by the application.

The Examiner agrees that the disclosure recites a technique of pre-selecting which of multiple rules in a master set of rules shall be executed (page 7 line 4 to page 8 line 3 as well as corresponding text in the detailed description of the application and corresponding figures). However, after this pre-selection process, note that the disclosure indicates that the selected rules are processed in order from first to last (page 7, lines 5-7 as well as corresponding text in the detailed description of the application and corresponding figures). Also, the specification indicates that prior to selecting a second rule for execution, the access control system selects the first rule for execution since rules are processed in order from first to last (also page 7, lines 5- as well as corresponding

text in the detailed description of the application and corresponding figures 7). The first rule can include a disregard instruction that is executed (see page 7 line 4 to page 8 line 3 as well as corresponding text in the detailed description of the application and corresponding figures). Thereafter, prior to selecting the second rule for execution, the access control system executes a "respective filter operation" such as a routine of evaluating and marking rule operations in another following rule, the marked rule operations being disregarded based on execution of the disregard instruction in the first rule (page 9, lines 6-24 as well as corresponding text in the detailed description of the application and corresponding figures). This respective filter operation associated with the second rule enables the access control system to identify whether to select the second rule for execution (if there are any non-marked rule operations) and execute which if any rule operations in the second rule (page 9, lines 6-24 as well as corresponding text in the detailed description of the application and corresponding figures).

Applicant respectfully submits that claim 77 includes limitations not shown in the cited prior art. For example, claim 77 recites "after selecting and executing the first rule and after selecting the second rule, executing rule operations in the second rule as well as disregarding execution of at least one rule operation in the second rule based on execution of the disregard instruction in the first rule." This further clarifies the claimed technique of disregarding only a portion of a rule and not the whole rule altogether. The cited reference states that a respective rule can be discarded. However, there is no indication whatsoever in the cited reference that only a portion of a respective discarded rule in Calvignac is ever executed. In Calvignac, either a whole rule is executed or not. In contradistinction, claim 77 recites that each of the first and second rules include respective rule operations, a portion of the second rule being executed depending on a disregard rule operation of the first rule. Applicant respectfully

requests allowance of claim 77. Claim 81 should be allowable for similar reasons.

Note that claims 78-80 include additional limitations not disclosed in Calvignac. For example, claim 78 recites “wherein performing the rule operation in the first rule includes performing a conditional disregard instruction that identifies a particular type of rule operation to disregard from execution in the selected at least two rules, the method further comprising: disregarding execution of a rule operation of the particular type in the second rule.” As discussed above, Calvignac does not execute a selected rule to identify which rule operations to disregard in other rules.

Claim 80 recites “selectively executing rule operations associated with the first rule and the second rule depending on: i) a type of data associated with the access request, ii) an amount of space available associated with the storage resource, and iii) a membership class of a user generating the access request.” Calvignac discloses that data packets are forwarded based on information in respective headers of the data packets. There is no indication that a header of a data packet includes any such information. Thus, the Examiner fails to cite any passage in Calvignac that discloses this claim limitation.

Patentability of Claim 52 and Corresponding Dependent Claims

The Office Action cites Calvignac (U.S. Patent 6,539,394) as the closest prior art to reject the invention as in claim 52. The Examiner rejects claim 52 for the same reason as claim 45. Applicant respectfully traverses the rejection because claim 52 includes limitations not found in any of the cited references.

Similar to claim 1 as discussed above, claim 52 recites “at least one of the multiple rules including multiple rule operations to be performed in sequential order.” The Examiner contends that FIGS. 3c-3d disclose this claim limitation in

claim 52. Applicant respectfully disagrees with this assertion. The cited passages and figures only disclose that rules are selected or discarded based on a filter rule. There is no discussion that any particular one of the rules includes multiple rule operations, especially rule operations that are executed in sequential order. Calvignac may disclose a technique of selecting which rules shall be used to make a forwarding decision, however, Calvignac does not disclose that the selected rules (from the leaf nodes of the decision tree) each include multiple rule operations nor that execution of a rule operation in one of the selected rules includes a disregard instruction that, when executed, causes fewer than all rule operations in another rule to be executed. See Calvignac at column 13, line 30 to column 14 line 6. The comparison of Calvignac at the cited passages to the claimed invention do not make sense. For example, the cited passages recite a technique of selecting rules for a particular dimension of a header packet, not that a respective rule in Calvignac includes a disregard instruction. Each filter rule has a corresponding range of values that is used to create the decision tree that is used to select applicable rules. Thus, the cited passages do not disclose every claim limitation. Accordingly, Applicant respectfully requests allowance of claim 52.

Claims 53, 55, 56 and 57 depend from claim 52 and include further distinctions not found in the cited references and therefore should also be allowable.

For example, claim 57 recites “wherein performance of the IF-THEN operation includes identifying whether an application generating the access request uses a particular resource in the storage system as well as whether a requestor associated with the access request is a member of a particular specified group and, if so, performing the rule operations in the first rule.” The Examiner cites a portion of Calvignac discussing how filter rules associated with data packets are used to decide what action to take with the data packet. A key

is constructed from bits in a respective header of a data packet. There is no indication that the header information identifying whether an applicant generating a respective data packet uses a particular resource in a respective storage system. Also, there is no indication that the header information identifies whether a requestor associated with the access request is a member of a particular specified group. Accordingly, the rejection of claim 57 is improper. Applicant respectfully requests allowance of claim 57.

Claims 81 and 82 depend from claim 52 and include further distinctions not found in the cited references and therefore should also be allowable. Note that claim 81 is similar in scope to claim 77 and should be allowable for the same reasons.

Patentability of Claim 58 and Corresponding Dependent Claims

The Office Action cites Calvignac (U.S. Patent 6,539,394) as the closest prior art to reject the invention as in claim 58. Applicants respectfully traverse the rejection because claim 52 includes applicable limitations not found in any of the cited references as discussed above for claim 1 as well as other claims. Claims 59-62 depend from claim 58 and include further distinctions not found in the cited references and therefore should also be allowable.

Applicant submits that claim 60 further includes distinctions over Calvignac. For example, claim 60 recites "wherein a field of data in the conditional disregard rule operation specifically identifies a first type of rule operations that are to be disregarded from execution in the set of rules, execution of the conditional disregard rule operation not having any affect on whether to perform a second type of rule operations in the set of rules." The Examiner cites column 8, lines 24-47 for these limitations. Applicant submits that Calvignac does not disclose a disregard rule operation identifying a type of rule operation in a selected set of rules to be disregarded. Instead, Calvignac discloses sweeping

through ranges to create a decision tree that is used to select which filter rules shall be applied to a key and make a forwarding decision. The teachings in Calvignac, therefore, are not equivalent to limitations in claim 60. The rejection of claim 60 should be withdrawn.

Claim 62 recites “during processing of the set of rules, performing an unconditional disregard rule operation in the set of rules that results in termination of performing any other rule operations in the selected set of rules.” Applicant disagrees with the Examiner’s assessment of column 2, lines 40-45. This passage recites matching a key of a packet to criteria for a filter rule. That is, if there is match, then a filter rule is applied. If not, a filter rule is not applied. As discussed in Calvignac, this process is repeated to determine whether other filter rules apply to a key. There is no indication that the process of checking stops, even for all other selected rules in a subset. Column 5 lines 28-35 only indicates that ranges or exact matches can be used in the check process whether a rule applies to a key. Again, there is no indication that the process of checking stops for all other selected rules in a subset when there is no match. The rejection of claim 62 therefore should be withdrawn.

Patentability of Claim 63 and Corresponding Dependent Claims

The Office Action cites Calvignac (U.S. Patent 6,539,394) as the closest prior art to reject the invention as in claim 63. Applicants have amended claim 63 to include the limitations of claim 65. Amended claim 63 should be allowable for the same reasons that claim 45 is allowable. Dependent claims 64, and 66-69 depend from claim 63 and include further distinctions not found in the cited references and therefore should also be allowable.

Claim 67 recites “wherein the disregard rule operation is a conditional disregard rule operation, a field of data in the conditional disregard rule operation specifically identifying a first type of rule operations that are to be disregarded

from execution in the first set of rules and the second set of rules, execution of the conditional disregard rule not having any affect on whether to perform a second type of rule operation in the second set of rules.” This claim is allowable for the same reasons claim 60 is allowable.

Patentability of Claim 70 and Corresponding Dependent Claims

The Office Action cites Calvignac (U.S. Patent 6,539,394) as the closest prior art to reject the invention as in claim 70. Applicants respectfully traverse the rejection because claim 70 includes limitations not found in any of the cited references as discussed above for claim 1 as well as other claims. Claims 71-75 depend from claim 70 and include further distinctions not found in the cited references and therefore should also be allowable.

Claim 70 recites “during execution of rule operations of that rule, executing a first conditional disregard instruction that establishes a first set of pre-conditions that must be met in successive rules in the master rule set in order for those successive rules to be executed after the rule containing the first conditional disregard instruction has been executed; and executing at least one successive rule in the master rule set for which the access request meets the filters of those successive rules, and for which the first set of pre-conditions established by executing the first conditional disregard instruction are also met.” As discussed, Calvignac does not discuss a process of executing rule operations, but instead addresses selecting rules to be applied to a key. There certainly is no recitation in Calvignac of establishing preconditions based on execution of a rule, especially preconditions that must be met in order for successive rules to be executed after executing a conditional disregard instruction. The claimed technique affords a novel way of enabling one executed rule from eliminating other rules or rule operations from also being applied to an access request. There is no such teaching in Calvignac or any other cited

reference. The rejection of claim 70 is improper and therefore should be withdrawn.

Claim 72 recites “wherein pre-conditions established by execution of the conditional disregard instructions indicate a type of data upon which rule operations of successive rules in the master rule set operate that are not to be executed during execution of the successive rules in the master rule set.” The cited passages in Calvignac do not discuss a process of establishing preconditions, especially those that indicate a type of data upon which successive rules are not to be executed in a selected set of rules. The claimed technique affords a novel way of indicating which type of rules shall be eliminated during an execution process. There is no such teaching in Calvignac or any other cited reference. The rejection of claim 72 is improper and therefore should be withdrawn.

Patentability of Claim 76

The Office Action cites Calvignac (U.S. Patent 6,539,394) as the closest prior art to reject the invention as in claim 76. Applicants respectfully traverse the rejection because claim 76 includes limitations not found in any of the cited references as discussed above for similar reasons as discussed above.

CONCLUSION

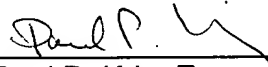
In view of the foregoing remarks, Applicants submit that the pending claims are in condition for allowance. A Notice to this affect is respectfully requested. If the Examiner believes, after reviewing this Response, that the pending claims are not in condition for allowance, the Examiner is respectfully requested to call the Applicant(s) Representative at the number below for an interview.

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Applicants hereby petition for any extension of time which is required to maintain the pendency of this case. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 50-0901.

If the enclosed papers or fees are considered incomplete, the Patent Office is respectfully request(s)ed to contact the undersigned Attorney at (508) 366-9600, in Westborough, Massachusetts.

Respectfully submitted,



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